PATENT
Attorney Docket No.: 01435.0114
Customer Number: 22,852

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Continuation of PCT Application of PCT/GB99/03451

Peter Simpson BELL et al.

Serial No.: Not yet assigned — Group Art Unit:

Filed: April 27, 2001 — Examiner:

For: PH CONTROL METHOD OF REDUCING NITROGEN OXIDES EMISSION

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

**IN THE SPECIFICATION:**

Please amend the specification as follows:

Page 1, after the title, insert --This application is a continuation of international application number PCT/GB99/03451, filed October 19, 1999--

**IN THE CLAIMS:**

Please cancel without prejudice or disclaimer now pending claims 1-17 and substitute claims 18-34 with the following complete set of new claims:

18. (New) A process for the pH control of a silver nitrate solution used for the selective recovery of olefins from a mixture of gases, said process comprising:

a) bringing a gaseous mixture comprising olefins and hydrogen into contact with an aqueous silver nitrate solution, whereby the olefins are absorbed into the silver nitrate solution as a complex;

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b) separating the solution comprising the complexed olefins from the non-absorbed gases;

c) de-pressurising and heating the olefin complex solution from (b) so as to release the olefins from the complex and regenerate the silver nitrate solution;

d) passing said regenerated silver nitrate solution through a bed comprising silver oxide so as to maintain the pH value of the silver nitrate between 3 and 6; and

e) recycling the silver nitrate solution regenerated in (d) to step (a).

19. (New) A process as claimed in claim 18, wherein the silver oxide is used in granular form.

20. (New) A process as claimed in claim 18, wherein the silver oxide is used in granular form in the absence of a binding agent.

21. (New) A process as claimed in claim 18, wherein the silver oxide is used in powder form.

22. (New) A process as claimed in claim 18, wherein the silver oxide is supported on a zeolite, a clay or an alumina.

23. (New) A process as claimed in claim 18, wherein the silver nitrate solution employed in step (a) has a concentration of 1 to 10 M.

24. (New) A process as claimed in claim 18, wherein an excess of silver oxide is employed in step (d).

25. (New) A process as claimed in claim 18, which further comprises the step of (f) passing the silver nitrate solution regenerated in step (c) through a filtering aid, which is

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capable of retaining any particulate silver present in said regenerated silver nitrate solution.

26. (New) A process as claimed in claim 25, wherein any particulate silver retained by said filtering aid is recovered and contacted with nitric acid to produce fresh silver nitrate.

27. (New) A process as claimed in claim 25, wherein step (f) is carried out prior to step (d).

28. (New) A process as claimed in claim 18, wherein acetylenic compounds are removed from the gaseous mixture comprising olefins and hydrogen.

29. (New) A process as claimed in claim 28, wherein said acetylenic compounds are removed from said gaseous mixture before said gaseous mixture is contacted with silver nitrate solution in step (a).

30. (New) A process as claimed in claim 28, wherein said acetylenic compounds are removed by passing the gaseous mixture through means capable of forming a complex with the acetylenic compounds in the gaseous mixture.

31. (New) A process as claimed in claim 28, wherein said acetylenic compounds are removed by passing the gaseous mixture through a guard bed comprising a silver-ion exchanged zeolite.

32. (New) A process as claimed in claim 18, which comprises:

monitoring the amount of acetylide compounds in the olefin complex solution formed in step (a) and

removing at least a portion of said acetylide compounds from said solution before the amount of acetylide compounds is found to exceed a threshold level.

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33. (New) A process as claimed in claim 18, which is carried out for the selective recovery of ethylene and/or propylene from a petrochemical stream which has been subjected to steam cracking.

34. (New) A process as claimed in claim 18, wherein the pH of the silver nitrate is maintained between 4 and 5.5.

**REMARKS**

The examiner is respectfully requested to consider the above preliminary amendment prior to examination of the application. The claims have been amended to eliminate multiple claim dependency and to conform the claims to U.S. practice. No new matter has been added.

If there are any other fees due in connection with the filing of this preliminary amendment, please charge the fees to Deposit Account No. 06-0916. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our deposit account.

Respectfully submitted,
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By: 
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Date: April 27, 2001
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